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ABSTRACT

This publication specified the requirements for certification of pesticide applicators as provided in the Federal Insecticide, Fungicide and Rodenticide Act as amended in 1972. Sections 171.1-171.6 of the Act are outlined in detail for clarification. Included in this document are: definitions of terms, categories of commercial applicators, standards for certification of commercial applicators, standards for certification of private applicators, and standards for supervision of non-certified applicators. (CS)

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Standards for **Certification of Pesticide Applicators**

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Office of Pesticide Programs
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Standards for certification of applicators who plan to use "restricted use" pesticides were printed in the Federal Register on October 9, 1974. They are reprinted here as a convenient reference for you.

Authority for the publication of applicator certification is found in Section 4, Federal Insecticide, Fungicide and Rodenticide Act, as amended in 1972.

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March 1976

CPA-2

Section 171.1 General

This section deals with the certification of applicators of restricted use pesticides.

Section 171.2 Definitions

Terms used in this subpart shall have the meanings set forth for such terms in the Act. In addition, as used in this subpart, the following terms shall have the meanings stated below:

(a) The term "accident" means an unexpected, undesirable event, caused by the use or presence of a pesticide, that adversely affects man or the environment.

(b) The term "Act" means the Federal Insecticide, Fungicide and Rodenticide Act, as amended (86 Stat. 973), and other legislation supplementary thereto and amendatory thereof.

(c) The term "Administrator" means the Administrator of the Environmental Protection Agency, or any office or employee of the Agency to whom authority has heretofore been delegated, or to whom authority may hereafter be delegated, to act in his stead.

(d) The term "Agency," unless otherwise specified, means the United States Environmental Protection Agency.

(e) The term "agricultural commodity" means any plant, or part thereof, or animal, or animal product, produced by a person (including farmers, ranchers, vineyardists, plant propagators, Christmas tree growers, aquaculturists, floriculturists, orchardists, foresters, or other comparable persons) primarily for sale, consumption, propagation, or other use by man or animals.

(f) The term "calibration of equipment" means measurement of dispersal or output of application equipment and adjustment of such equipment to control the rate of dispersal, and droplet or particle size of a pesticide dispersed by the equipment.

(g) The term "certification" means the recognition by a certifying agency that a person is

competent and thus authorized to use or supervise the use of restricted use pesticides.

(h) The term "certified applicator" means any individual who is certified to use or supervise the use of any restricted use pesticides covered by his certification.

(i) The term "commercial applicator" means a certified applicator (whether or not he is a private applicator with respect to some uses) who uses or supervises the use of any pesticide which is classified for restricted use for any purpose or on any property other than as provided by the definition of "private applicator."

(j) The term "compatibility" means that property of a pesticide which permits its use with other chemicals without undesirable results being caused by the combination.

(k) The term "competent" means properly qualified to perform functions associated with pesticide application, the degree of capability required being directly related to the nature of the activity and the associated responsibility.

(l) The term "common exposure route" means a likely way (oral, dermal, respiratory) by which a pesticide may reach and/or enter an organism.

(m) The term "environment" means water, air, land, and all plants and man and other animals living therein, and the interrelationships which exist among them.

(n) The term "forest" means a concentration of trees and related vegetation in non-urban areas sparsely inhabited by and infrequently used by humans; characterized by natural terrain and drainage patterns.

(o) The term "hazard" means a probability that a given pesticide will have an adverse effect on man or the environment in a given situation, the relative likelihood of danger or ill effect being dependent on a number of interrelated factors present at any given time.

(p) The term "host" means any plant or animal on or in which another lives for nourishment, development, or protection.

(q) The term "non-target organism" means a

plant or animal other than the one against which the pesticide is applied.

(r) The term "ornamental" means trees, shrubs, and other plantings in and around habitations generally, but not necessarily located in urban and suburban areas, including residences, parks, streets, retail outlets, industrial and institutional buildings.

(s) The term "practical knowledge" means the possession of pertinent facts and comprehension together with the ability to use them in dealing with specific problems and situations.

(t) The term "private applicator" means a certified applicator who uses or supervises the use of any pesticide which is classified for restricted use for purposes of producing any agricultural commodity on property owned or rented by him or his employer or (if applied without compensation other than trading of personal services between producers of agricultural commodities) on the property of another person.

(u) The term "protective equipment" means clothing or any other materials or devices that shield against unintended exposure to pesticides.

(v) The term "regulated pest" means a specific organism considered by a State or Federal agency to be a pest requiring regulatory restrictions, regulations, or control procedures in order to protect the host, man and or his environment.

(w) The term "restricted use pesticide" means a pesticide that is classified for restricted use under the provisions of Section 3(d)(1)(C) of the Act.

(x) The term "standard" means the measure of knowledge and ability which must be demonstrated as a requirement for certification.

(y) The term "State" means a State, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, the Trust Territory of the Pacific Islands, and American Samoa.

(z) The term "susceptibility" means the degree to which an organism is affected by a

pesticide at a particular level of exposure.

(aa) The term "toxicity" means the property of a pesticide to cause any adverse physiological effects.

(bb) The term "under the direct supervision of" means the act or process whereby application of a pesticide is made by a competent person acting under the instructions and control of a certified applicator who is responsible for the actions of that person and who is available if and when needed, even though such certified applicator is not physically present at the time and place the pesticide is applied.

Section 171.3 Categorization of Commercial Applicators of Pesticides

(a) Procedure

Categories of applicators (other than private) using or supervising the use of restricted use pesticides are identified below. State systems of applicator identification shall adopt these categories as needed, along with such appropriate subcategories as are necessary to meet the particular requirements of the State.

(b) Categories

(1) AGRICULTURAL PEST CONTROI

(i) *Plant*

This category includes commercial applicators using or supervising the use of restricted use pesticides in production of agricultural crops, including without limiting the foregoing, tobacco, peanuts, cotton, feed grains, soybeans and forage; vegetables; small fruits; tree fruits and nuts, as well as on grasslands and non-crop agricultural lands.

(ii) *Animal*

This category includes commercial applicators using or supervising the use of restricted use pesticides on animals, including without limiting the foregoing, beef cattle, dairy cattle, swine, sheep, horses, goats, poultry

and livestock, and to places on or in which animals are confined.

Doctors of Veterinary Medicine engaged in the business of applying pesticides for hire, publicly holding themselves out as pesticide applicators, or engaged in large-scale use of pesticides are included in this category.

(2) FOREST PEST CONTROL

This category includes commercial applicators using or supervising the use of restricted use pesticides in forests, forest nurseries, and forest seed producing areas.

(3) ORNAMENTAL AND TURF PEST CONTROL

This category includes commercial applicators using or supervising the use of restricted use pesticides to control pests in the maintenance and production of ornamental trees, shrubs, flowers, and turf.

(4) SEED TREATMENT

This category includes commercial applicators using or supervising the use of restricted use pesticides on seeds.

(5) AQUATIC PEST CONTROL

This category includes commercial applicators using or supervising the use of any restricted use pesticide purposefully applied to standing or running water, excluding applicators engaged in public health related activities included in category 8 below.

(6) RIGHT-OF-WAY PEST CONTROL

This category includes commercial applicators using or supervising the use of restricted use pesticides in the maintenance of public roads, electric powerlines, pipelines, railway rights-of-way or other similar areas.

(7) INDUSTRIAL, INSTITUTIONAL, STRUCTURAL AND HEALTH RELATED PEST CONTROL

This category includes commercial applicators using or supervising the use of

restricted use pesticides in, on, or around food handling establishments, human dwellings, institutions, such as schools and hospitals, industrial establishments, including warehouses and grain elevators, and any other structures and adjacent area, public or private; and for the protection of stored, processed, or manufactured products.

(8) PUBLIC HEALTH PEST CONTROL

This category includes State, Federal or other governmental employees using or supervising the use of restricted use pesticides in public health programs for the management and control of pests having medical and public health importance.

(9) REGULATORY PEST CONTROL

This category includes State, Federal or other governmental employees who use or supervise the use of restricted use pesticides in the control of regulated pests.

(10) DEMONSTRATION AND RESEARCH PEST CONTROL

This category includes: (1) individuals who demonstrate to the public the proper use and techniques of application of restricted use pesticides or supervise such demonstration, and (2) persons conducting field research with pesticides, and in doing so, use or supervise the use of restricted use pesticides.

Included in the first group are such persons as extension specialists and county agents, commercial representatives demonstrating pesticide products, and those individuals demonstrating methods used in public programs.

The second group includes: State, Federal, commercial and other persons conducting field research on or utilizing restricted use pesticides.

(c) Other Categories and Subcategories

Any State submitting a plan pursuant to this section for the certification of applicators,

as provided for below, may designate such subcategories within the above 10 categories as it deems necessary. In addition, a State may delete a category not needed or may request the Administrator's approval of additional major categories.

Section 171.4 Standards for Certification of Commercial Applicators

(a) Determination of Competency

Competence in the use and handling of pesticides shall be determined on the basis of written examinations, and, as appropriate, performance testing, based upon standards set forth below and which are approved by the Administrator. Such examination and testing shall include the general standards applicable to all categories (Section 171.4(b)) and the additional standards specifically identified for each category or subcategory (if any) in which an applicator is to be classified (Section 171.4 (c)). State standards must conform and be at least equal to those prescribed herein. In developing the details of standards at the State level and in structuring examinations, it is important to recognize and reflect the extent of competency appropriate and necessary to a particular category.

(b) General Standards for all Categories of Certified Commercial Applicators

(1) All commercial applicators shall demonstrate practical knowledge of the principles and practices of pest control and safe use of pesticides. Testing shall be based on examples of problems and situations appropriate to the particular category or subcategory of the applicator's certification and the following areas of competency:

(i) *Label & Labeling Comprehension*

(a) The general format and terminology of pesticide labels and labeling;

(b) The understanding of instructions, warnings, terms, symbols,

and other information commonly appearing on pesticide labels;

(c) Classification of the product, general or restricted; and

(d) Necessity for use consistent with the label.

(ii) *Safety*—Factors including:

(a) Pesticide toxicity and hazard to man and common exposure routes;

(b) Common types and causes of pesticide accidents;

(c) Precautions necessary to guard against injury to applicators and other individuals in or near treated areas;

(d) Need for and use of protective clothing and equipment;

(e) Symptoms of pesticide poisoning;

(f) First aid and other procedures to be followed in case of a pesticide accident; and

(g) Proper identification, storage, transport, handling, mixing procedures and disposal methods for pesticides and used pesticide containers, including precautions to be taken to prevent children from having access to pesticides and pesticide containers.

(iii) *Environment*—The potential environmental consequences of the use and misuse of pesticides as may be influenced by such factors as:

(a) Weather and other climatic conditions;

(b) Types of terrain, soil or other substrate;

(c) Presence of fish, wildlife and other non-target organisms; and

(d) Drainage patterns.

(iv) *Pests*—Factors such as:

(a) Common features of pest orga-

nisms and characteristics of damage needed for pest recognition;

(b) Recognition of relevant pests; and

(c) Pest development and biology as it may be relevant to problem identification and control.

(v) *Pesticides*—Factors such as:

(a) Types of pesticides;

(b) Types of formulations;

(c) Compatibility, synergism, persistence and animal and plant toxicity of the formulations;

(d) Hazards and residues associated with use;

(e) Factors which influence effectiveness or lead to such problems as resistance to pesticides; and

(f) Dilution procedures.

(vi) *Equipment*—Factors including:

(a) Types of equipment and advantages and limitations of each type; and

(b) Uses, maintenance and calibration.

(vii) *Application Techniques*—Factors including:

(a) Methods of procedure used to apply various formulations of pesticides, solutions, and gases, together with a knowledge of which technique of application to use in a given situation;

(b) Relationship of discharge and placement of pesticides to proper use, unnecessary use, and misuse; and

(c) Prevention of drift and pesticide loss into the environment.

(viii) *Laws and Regulations*—Applicable State and Federal laws and regulations.

(c) Specific Standards of Competency for Each Category of Commercial Applicators

Some of the factors referenced in (171.4(b)) are of particular importance because of the different types of activities carried out by applicators in each category. Such factors must be especially stressed and specifically reflected in State certification standards, as appropriate. For example, practical knowledge of drift problems should be required of agricultural applicators but not of seed treatment applicators. The latter, however, should be particularly knowledgeable of the hazards of the misuse of treated seed and the necessary precautionary techniques. Many applicators in categories 171.3(b) (8), (9), and (10) will have had considerable formal education, training and experience in preparation for their positions. Their competency with respect to the use and handling of pesticides will have been determined by examining boards of their professional scientific societies utilizing standards which equal or exceed those prescribed herein. Such standards should be consulted by States in developing their State standards for certification of such applicators under these regulations.

Commercial applicators in each category shall be particularly qualified with respect to the practical knowledge standards elaborated below:

(1) AGRICULTURAL PEST CONTROL

(i) *Plant*

Applicators must demonstrate practical knowledge of the crops grown and the specific pests of those crops on which they may be using restricted use pesticides. The importance of such competency is amplified by the extensive areas involved, the quantities of pesticides needed, and the ultimate use of many commodities as food and feed. Practical knowledge is required concerning soil and water problems, pre-harvest intervals, re-entry intervals, phyto-

toxicity, and potential for environmental contamination, non-target injury and community problems resulting from the use of restricted use pesticides in agricultural areas.

(ii) *Animal*

Applicators applying pesticides directly to animals must demonstrate practical knowledge of such animals and their associated pests. A practical knowledge is also required concerning specific pesticide toxicity and residue potential, since host animals will frequently be used for food. Further, the applicator must know the relative hazards associated with such factors as formulation, application techniques, age of animals, stress and extent of treatment.

(2) FOREST PEST CONTROL

Applicators shall demonstrate practical knowledge of the types of forests, forest nurseries, and seed production in their State and the pests involved. They should possess practical knowledge of the cyclic occurrence of certain pests and specific population dynamics as a basis for programming pesticide applications. A practical knowledge is required of the relative biotic agents and their vulnerability to the pesticides to be applied. Because forest stands may be large and frequently include natural aquatic habitats and harbor wildlife, the consequences of pesticide use may be difficult to assess. The applicator must therefore demonstrate practical knowledge of control methods which will minimize the possibility of secondary problems such as unintended effects on wildlife. Proper use of specialized equipment must be demonstrated, especially as it may relate to meteorological factors and adjacent land use.

(3) ORNAMENTAL AND TURF PEST CONTROL

Applicators shall demonstrate practi-

cal knowledge of pesticide problems associated with the production and maintenance of ornamental trees, shrubs, plantings, and turf, including cognizance of potential phytotoxicity due to a wide variety of plant material, drift, and persistence beyond the intended period of pest control. Because of the frequent proximity of human habitations to application activities, applicators in this category must demonstrate practical knowledge of application methods which will minimize or prevent hazards to humans, pets, and other domestic animals.

(4) SEED TREATMENT

Applicators shall demonstrate practical knowledge of types of seeds that require chemical protection against pests and factors such as seed coloration, carriers, and surface active agents which influence pesticide binding and may affect germination. They must demonstrate practical knowledge of hazards associated with handling, sorting and mixing, and misuse of treated seed such as introduction of treated seed into food and feed channels, as well as proper disposal of unused treated seeds.

(5) AQUATIC PEST CONTROL

Applicators shall demonstrate practical knowledge of the secondary effects which can be caused by improper application rates, incorrect formulations, and faulty application of restricted use pesticides used in this category. They shall demonstrate practical knowledge of various water use situations and the potential of downstream effects. Further, they must have practical knowledge concerning potential pesticide effects on plants, fish, birds, beneficial insects and other organisms which may be present in aquatic environments. These applicators shall demonstrate practical knowledge of the principles of limited area application.

(6) RIGHT-OF-WAY PEST CONTROL

Applicators shall demonstrate practical knowledge of a wide variety of environments since rights-of-way can traverse many different terrains, including waterways. They shall demonstrate practical knowledge of problems on runoff, drift, and excessive foliage destruction and ability to recognize target organisms. They shall also demonstrate practical knowledge of the nature of herbicides and the need for containment of these pesticides within the right-of-way area, and the impact of their application activities in the adjacent areas and communities.

(7) INDUSTRIAL, INSTITUTIONAL, STRUCTURAL AND HEALTH RELATED PEST CONTROL

Applicators must demonstrate a practical knowledge of a wide variety of pests including their life cycles, types of formulations appropriate for their control and methods of application that avoid contamination of food, damage and contamination of habitat and exposure of people and pets. Since human exposure, including babies, children, pregnant women, and elderly people, is frequently a potential problem, applicators must demonstrate practical knowledge of the specific factors which may lead to a hazardous condition, including continuous exposure in the various situations encountered in this category. Because health related pest control may involve outdoor applications, applicators must also demonstrate practical knowledge of environmental conditions particularly related to this activity.

(8) PUBLIC HEALTH PEST CONTROL

Applicators shall demonstrate practical knowledge of vector-disease transmission as it relates to and influences application programs. A wide variety of pests is involved, and it is essential that they be

known and recognized, and appropriate life cycles and habitats be understood as a basis for control strategy. These applicators shall have practical knowledge of a great variety of environments ranging from streams to those conditions found in buildings. They should also have practical knowledge of the importance and employment of such non-chemical control methods as sanitation, waste disposal, and drainage.

(9) REGULATORY PEST CONTROL

Applicators shall demonstrate practical knowledge of regulated pests, applicable laws relating to quarantine and other regulation of pests, and the potential impact on the environment of restricted use pesticides used in suppression and eradication programs. They shall demonstrate knowledge of factors influencing introduction, spread, and population dynamics of relevant pests. Their knowledge shall extend beyond that required by their immediate duties since their services are frequently required in other areas of the country where emergency measures are invoked to control regulated pests, and where individual judgments must be made in new situations.

(10) DEMONSTRATION AND RESEARCH PEST CONTROL

Persons demonstrating the safe and effective use of pesticides to other applicators and the public will be expected to meet comprehensive standards reflecting a broad spectrum of pesticide uses. Many different pest problem situations will be encountered in the course of activities associated with demonstration, and practical knowledge of problems, pests, and population levels occurring in each demonstration situation is required. Further, they should demonstrate an understanding of pesticide-organism interactions and the importance of integrating pesticide use with other control methods. In general, it

would be expected that applicators doing demonstration pest control work possess a practical knowledge of all of the standards detailed in Section 171.4(b). In addition, they shall meet the specific standards required for categories (1) through (7) of this section as may be applicable to their particular activity.

Persons conducting field research or method improvement work with restricted use pesticides should be expected to know the general standards detailed in 171.4(b). In addition, they shall be expected to know the specific standards required for categories (1) through (9) of this section, applicable to their particular activity, or alternatively, to meet the more inclusive requirements listed under "Demonstration."

(d) Special Standards—This space reserved for possible issuance of Special Standards.

(e) The above standards do not apply to the following persons for purposes of these regulations:

(1) Persons conducting laboratory type research involving restricted use pesticides; and (2) Doctors of Medicine and Doctors of Veterinary Medicine applying pesticides as drugs or medication during the course of their normal practice.

Section 171.5 Standards for Certification of Private Applicators

(a) Competence in the use and handling of pesticides by a private applicator will be determined by procedures set forth below. State standards must conform and be at least equal to those prescribed herein.

As a minimum requirement for certification, a private applicator must show that he possesses a practical knowledge of the pest problems and pest control practices associated with his agricultural operations, proper storage, use, handling and disposal of the pesticides and

containers, and his related legal responsibility. This practical knowledge includes ability to:

(1) Recognize common pests to be controlled and damage caused by them.

(2) Read and understand the label and labeling information--including the common name of pesticide he applied; pest(s) to be controlled; timing and methods of application; safety precautions; any preharvest or re-entry restrictions; and any specific disposal procedures.

(3) Apply pesticides in accordance with label instructions and warnings, including the ability to prepare the proper concentration of pesticide to be used under particular circumstances taking into account such factors as area to be covered, speed at which application equipment will be driven, and the quantity dispersed in a given period of operation.

(4) Recognize local environmental situations that must be considered during application to avoid contamination.

(5) Recognize poisoning symptoms and procedures to follow in case of a pesticide accident.

(b) Such competence of each private applicator shall be verified by the responsible State agency through the administration of a private applicator certification system which ensures that the private applicator is competent, based upon the standards set forth above, to use the restricted use pesticides under limitations of applicable State and Federal laws and regulations. A certification system shall employ a written or oral testing procedure, or such other equivalent system as may be approved as part of a State plan.

(1) In any case where a person, at the time of testing for certification, is unable to read a label, the responsible State agency may employ a testing procedure, previously approved by the Administrator, which can adequately assess the competence of such person with regard to all of the above standards. Certification must be

related and limited to the use and handling of each individual pesticide for which he desires certification at any time. Therefore, the applicator will be authorized to use only the pesticide(s) for which he has demonstrated competence. A specific procedure is required for Section 171.5(a)(2) relating to label comprehension, with testing designed to assure his knowledge of the following:

(i) Understanding of the label and labeling information including those items indicated in that subsection.

(ii) Sources of advice and guidance necessary for the safe and proper use of each pesticide related to his certification.

Section 171.6 Standards for Supervision of Non-Certified Applicators by Certified Private and Commercial Applicators

Certified applicators whose activities indicate a supervisory role must demonstrate a practical knowledge of Federal and State supervisory requirements, including labeling, regarding the application of restricted use pesticides by non-certified applicators.

The availability of the certified applicator must be directly related to the hazard of the situation. In many situations, where the certified applicator is not required to be physically present, "direct supervision" shall include verifiable instruction to the competent person, as follows: (1) detailed guidance for applying the pesticide properly, and (2) provisions for contacting the certified applicator in the event he is needed. In other situations, and as required by the label, the actual physical presence of a certified applicator may be required when application is made by a non-certified applicator.

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